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ABSTRACT

Telling teachers what to do through state and district standard-setting policies is seen as antithetical to empowered teachers and a strengthened teaching profession. Policies for empowering teachers are less well articulated; teacher autonomy is often thought to be the automatic product of an absence of external constraints and guidelines. An analysis is provided of whether good teaching of worthwhile content to all students is better served by standard-setting initiatives or through leaving teachers alone. The challenge is to set standards which guarantee good teaching of worthwhile content to all students. To do this will require standard-setting activities which preserve, or strengthen, the responsibility that teachers and students accept together for student learning. One way to do this might be to shift external standard setting away from reliance on rewards and sanctions and toward reliance on authority. External standard-setting activities would become matters of persuasion, not issues of compliance. The key seems to be involving teachers seriously in the business of setting standards for student achievement. Through teacher participation the standards would take on authority; teachers themselves would be telling teachers what to do. (Author/JD)

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EXTERNAL STANDARDS AND GOOD TEACHING: THE PROS AND CONS OF TELLING TEACHERS WHAT TO DO

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Abstract

Telling teachers what to do through state and district standard setting policies is seen as antithetical to empowered teachers and a strengthened teaching profession. Policies for empowering teachers are less well articulated; teacher autonomy is often thought to be the automatic product of an absence of external constraints and guidelines. An analysis is provided of whether good teaching of worthwhile content to all students is better served by standard setting initiatives or through leaving teachers alone. There are other alternatives, of course, and they may ultimately prove to be the more attractive. The analysis sheds light on that possibility, too.

EXTERNAL STANDARDS AND GOOD TEACHING: THE PROS AND CONS OF TELLING TEACHERS WHAT TO DO[1]

Andrew C. Porter[2]

Education, especially compulsory education, is a cornerstone of our current society, an important part of our history, and largely seen as the key to our future (e.g., Carnegie Forum on Education and the Economy, 1986). Schools, both public and private, are the institutions through which America's youth are guaranteed access to education. For most students, schools represent the primary resource for formal education and, for many students, they represent the primary resource for learning academic content. Yet our schools are the victim of their own enormous success; the more they accomplish, the more that is demanded of them (e.g., Cusick & Wheeler, 1988).

In the 1980s, student achievement standards, set external to schools and classrooms, represent a demand on schools. The purpose in what follows is to analyze these 1980s standard-setting reforms to see in what ways they might connect to student learning. The analysis takes teaching as the primary source of potential linkage. In general terms, the goal of external standard setting is to maximize the probability of good teaching of worthwhile content to all students. Unpacking this general goal identifies three problems. These problems, in turn, form the context for the analysis of external standards and their probable effects.

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[1]This paper was presented at a conference on the "Impact of Reform on the Secondary School Context" jointly sponsored by the Center for Research on the Context of Secondary School Teaching and the Center for Policy Research on Education and held at Michigan State University, East Lansing, on April 19-20, 1988. It will appear in an edited book.

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The first problem is the lack of clear agreement among students, parents, teachers, school administrators, school boards, and the public as to what constitutes most worthwhile content for students to learn. The goals of schooling are like shifting sand, varying with time, place, and person. Just five years ago, basic skills were the focus of state policies, school improvement programs, and state testing programs (e.g., Purkey & Smith, 1983). While much of the emphasis on basic skills remains at the operating level in classrooms, public policy is increasingly concerned with students acquiring higher order thinking and problem-solving skills (e.g., Costa, 1985). Language about student outcomes has shifted from mastery of reading, writing, and arithmetic to empowering students with accessible and usable knowledge.

There is not even agreement about the relative emphasis that schools should place on academic content. Desires to connect school and work press for a vocational orientation to schooling (e.g., Goodlad, 1984). Concerns for orderly communities and preserving democracy press for an orientation to schooling of socialization, moral development, and citizenship (e.g., Torney-Purta & Schwille, 1986). The hope is that schools can be all things to all people. The reality appears to be that they cannot.

Just as consensus is lacking about most worthwhile content, neither is there consensus about good teaching. There are researchers who emphasize direct instruction and student time on task (e.g., Rosenshine & Stevens, 1986), and there are others who believe that good teaching requires substantial allocations of time to student discussion and other forms of active student participation (e.g., Peterson, 1988). Some believe that good teaching is enhanced by scripts, detailed prescriptions of good practice (e.g., Hunter, 1976). Others believe that good teaching is epitomized by creative professionals operating within the parameters of general principles of good instruction but in creative

ways that fit the circumstances of their particular classroom (e.g., Lampert, 1986). Whatever good teaching is, it is clear that it is hard work, difficult to maintain all day, every day, year after year. Thus, some believe good teaching is strategic, requiring focused allocation of limited resources (e.g., time and energy) on key moments of instruction (e.g., Porter & Brophy, 1988). Much has been learned from the past decade of research on teaching (e.g., Wittrock, 1986). Nevertheless, the more that is known about good teaching, the more complicated good teaching appears to be and the clearer it becomes that guaranteeing good teaching is not easy.

There is a third problem. Even if we had agreement upon the intended outcomes of schooling and upon the characteristics of good teaching, the massive problem of implementation would remain: How to deliver good teaching of worthwhile content to all students. In the 1980s, teachers are seen as the solution to the implementation problem. Better teachers are needed in much greater supply (e.g., individuals with thorough mastery of subject matter, individuals who are experts in pedagogical practices, individuals with high levels of personal commitment to student learning).

There are, however, opposing points of view for how this can best be accomplished. One view is that teachers should be empowered as autonomous professionals. The Carnegie Forum on Education and the Economy, in its report A Nation Prepared, states that "The key to success lies in creating a profession equal to the task. A profession of well-educated teachers prepared to assume new powers and responsibilities to redesign schools for the future" (1986, p. 2). In contrast, state initiatives have moved in the direction of telling teachers what to do; what to teach and how to teach it (e.g., McNeil, 1988a, 1988b, 1988c; Rosenholtz, 1987).

In earlier reforms, teachers were seen as the problem, but not as a potential solution. In the 1960s strengthening curriculum materials was seen as the key to delivering worthwhile content to all students. Teachers were seen as technicians and the goal was to teacher-proof the curriculum. Between the 1960s (focus on curriculum materials) and the 1980s (focus on the teacher corps), the preferred solution to the problem of delivering worthwhile content to all students was strengthening the school as an institution. The emphasis was on principal leadership and school culture.

Will the 1980s focus on strengthening teaching be viewed as successful or will it disappear into the background of school improvement efforts, as was the case for the curriculum materials reforms of the 1960s and the school leadership reforms of the 1970s? The answer will, in part, be determined by resolving the two opposing points of view for strengthening teaching. At present, they coexist, but are largely viewed as moving on a collision course. Telling teachers what to do through state and district policies is seen as antithetical to empowering teachers and strengthening the teaching profession. External standard setting represents one piece of telling teachers what to do. Policies for empowering teachers are less well articulated. Teacher autonomy is often thought to be the automatic product of an absence of external constraints and guidelines. The purpose here is to provide an analysis of whether the goal of good teaching of worthwhile content to all students is better served by standard-setting initiatives or through leaving teachers alone. There are other alternatives, of course, and they may ultimately prove to be the more attractive. The following analysis sheds light on that possibility, too.

Good Teaching of Worthwhile Content

Externally set standards for student achievement not only specify what content is most worthwhile, they specify criteria for judging adequate teaching

and learning. Standard setting, therefore, has potential for connecting each of the two main pieces of the goal, good teaching and worthwhile content. Each of these is considered in turn.

Good Teaching

Despite lack of agreement about the details of good teaching, there is considerable agreement about some of its essential characteristics (e.g., Porter & Brophy, 1988). First, good teaching is planful. While teachers seldom conform to a totally rational model--setting clear instructional objectives, planning activities against those objectives, monitoring outcomes, and making adjustments where appropriate--the most effective teachers do have in mind goals for student learning. Not surprisingly, those teachers are most successful in obtaining the student outcomes consistent with their goals. Second, good teaching is most likely to occur when teachers accept some responsibility for student outcomes. Neither of these two characteristics of good teaching can be taken for granted. Teachers differ dramatically in the extent to which they have clear goals for student achievement, in the types of student achievement toward which they direct their instruction, and on the degree to which they see student outcomes as something partly under their control and for which they accept responsibility.

In elementary school, large percentages of teachers believe that social development and emotional growth of students are the most important targets for classroom instruction. For example, in polling recent graduates of Michigan State University's elementary education programs, "being very sensitive to the needs and abilities of individual students" was twice as often given as a description for how those prospective teachers hoped to be remembered as was being one "who pressed students to perform at their highest possible levels of

academic achievement" (Porter & Freeman, 1986). In high school, students pressed by outside-of-school interests and teachers worn down by years of hard work and low pay sometimes strike a "bargain" to live and let live in as comfortable a classroom environment as can be manufactured; clear student achievement goals and hard academic standards are set aside (Powell, Farrar, & Cohen, 1985; Sedlak, Wheeler, Pullin, & Cusick, 1986).

Even teachers who do focus on academic achievement must make difficult decisions about how much to attempt. Generally, teachers are more easily persuaded to add topics to their instruction than they are to delete topics. The effect is that more and more topics are taught for shorter periods of time, with little hope of student mastery (e.g., Floden, Porter, Schmidt, Freeman, & Schwille, 1981).

Just as teachers differ in important ways in the intended student outcomes they hold for their instruction, they also differ in important ways in the kind of outcomes for which they are willing to accept responsibility and the degree of responsibility they accept. Studies of high school science instruction show that most high school science teachers believe their responsibility is to deliver the content and the students' responsibility is to learn what is delivered. In classrooms where teachers do accept responsibility for all students to learn science, however, low aptitude students benefit (Lee & Gallagher, 1986). At the elementary school level, research to identify characteristics of unusually effective teachers with "problem children" found that effective teachers systematically differed from less effective teachers by seeing the student problem as something to be corrected, not just endured.

Just as there is not a functional relationship between teachers' goals for student achievement and actual student achievement, neither is there a functional relationship between the degree of responsibility teachers accept for

student achievement and actual student achievement. Obviously, a host of other factors are important (e.g., student aptitude, student motivation). Nevertheless, the probability of good teaching of worthwhile content to all students increases as teachers' goals focus on worthwhile content and as teachers see student achievement as partially under the control of what teachers do.

Worthwhile Content

Teachers with clear goals for student achievement can pursue those goals through making and exercising a series of decisions about intended outcomes. Either proactively or implicitly through their behavior, teachers decide how much time to allocate to a subject (e.g., how much time to allocate to mathematics instruction in fourth grade; how much time to allocate to the civil war in a course on United States history). Teachers also decide what topics to cover within that allocated time, whether or not to distinguish among students in topic coverage, and what standards of student achievement to hold in making decisions about pacing (e.g., Schwille et al., 1983). Together, these teacher-made content decisions define student opportunity to learn (e.g., Carroll, 1963). At a general level, these content decisions are distinguishable from teacher decisions about pedagogical practices (e.g., the extent and nature of student discussion employed in pursuit of the intended student outcome).

In contrast to teacher content decision making, standard setting can be pursued through any combination of four possible strategies defined by the 2 x 2 configuration in Table 1. Standard setting can be accomplished through specifying what will be studied or through specifying how much must be learned (the columns in Table 1). Either students can be held accountable or teachers can be held accountable (the rows in Table 1). A standard might specify to students what they will study (Cell A). An example is the standard of requiring

four years of English to graduate from high school. A standard might hold students accountable for what they learn (Cell B). Passing an English proficiency test as a requirement for high school graduation is an example of this type of standard setting. Standards can specify to teachers what they should teach (Cell C). A state framework of instructional objectives is an example. Finally, standards can hold teachers accountable for what their students learn (Cell D). Merit pay based on student achievement is an example.

Table 1

Setting Standards

Holding accountable (requirement of)	Specifying: What will be studied	Specifying: How much must be learned
Students	A	B
Teachers	C	D

A. Secondary: 4 years of English to graduate
Elementary: Not often done

B. Secondary: English proficiency test must be passed to graduate
Elementary: Reading comprehension test must be passed to be promoted to fourth grade

C. Secondary:)
Elementary:) State framework of instructional objectives

D. Secondary:)
Elementary:) Merit pay based on student achievement

These four approaches to external standard setting can occur individually or in combination. All four approaches are directive; they attempt to specify from outside the classroom what is to be taught and to what effect.

Regardless of whether or not external standards exist, standards will be set. Teachers cannot teach without deciding how much time to spend, what topics to cover, with what students, and to what standards of achievement. This raises the possibility of nondirective approaches to influencing student achievement standards. Efforts to improve instructional materials or strengthen teacher knowledge can be viewed as nondirective approaches. Neither direct approaches to standard setting nor nondirective approaches are functionally related to standards as they actually operate in classrooms. One important piece, then, of judging the utility of external standard setting is to understand the linkage between standards as set and standards as enacted.

A Framework for Linking External Standards to Classroom Practices

From research on teachers' content decisions in elementary school mathematics (Porter, Floden, Freeman, Schmidt, & Schwille, 1988), a framework for linking school policies and teachers' content decisions emerged. That emerging theory about what gives content policies weight holds promise for analyses of linkages between external standards and classroom practices. The framework has four parts: prescriptiveness, consistency, authority, and power.

Prescriptiveness denotes how specific and explicit an external standard is in specifying classroom practice. For example, a requirement of four years of high school English says little about what topics will be taught and to what standards of achievement. The standard is limited to specifying only two content decisions, how much time will be spent and who will spend it. If, in addition to requiring four years of English, a syllabus for each year was

specified, the standard setting activity would be more prescriptive. Consistency refers to the ways in which multiple standard-setting activities connect. If, for example, a state, a school district, and a school join together in defining what students must study (e.g., four years of English) and what students must learn (pass a test of English in order to graduate) and if these two standard-setting efforts are aligned such that the content taught is also the content tested, the two standard-setting activities are consistent.

Two additional characteristics that hold promise for predicting the effects of standard-setting initiatives are authority and power (see, for example, Spady & Mitchell, 1979). Standard-setting activities can be authoritative through invoking law (e.g., being the official policy of the school hierarchy), through being based on input from experts (e.g., having been developed by teachers or university curriculum experts), through consistency with social norms (e.g., being standards similar to the standards that already exist in typical practice), or through promotion by charismatic leaders (e.g., having an aggressive and personable school principal committed to classroom instruction on the one hand and externally set standards on the other). The power of an external standard can be strengthened through rewards (e.g., merit pay for teachers, promotion for students) and sanctions.

Standard setting that specifies what must be learned invariably acquires strength through rewards and sanctions. Standard setting that specifies what must be studied typically does not involve rewards and sanctions, but may have authority. Standard setting that has authority is persuasive; teachers and students believe that authoritative standards are appropriate and in their own personal best interest. Standard setting that relies solely upon power for its effects is not persuasive. The influence of such standards on classroom practice and student behavior is accomplished through forcing teachers and students to

do what they otherwise would not have done. To have real and lasting effects, standard setting must be persuasive. It is important, therefore, to design standard setting policies that are authoritative.

How Might Standards Work?

The goal is to maximize the probability of good teaching of worthwhile content to all students. Using external standards to reach this goal is based upon two beliefs. First, external standard setting clarifies what content is most worthwhile. Teachers and students are expected to focus their efforts on the student achievement outcomes specified (or implied) in the standards. Second, through attempting to meet externally set standards, teachers and students are expected to expend greater effort toward these desired ends. Students are to be motivated to pass tests and become certified; teachers are to be motivated to have large percentages of their students recorded as having passed tests and become certified. Teachers may be directly motivated by merit pay or the desire to acquire titles that distinguish them from their colleagues. Both of these beliefs suggest that external standards will bring about better instruction and more appropriate learning. Standards are also used to sort people, for example, into categories of competent and incompetent. This sorting function of standards does not result in any beneficial effects for instruction or student learning and, therefore, is not considered further.

Just as there are beliefs about benefits from external standards, there are also fears about losses. Paradoxically, the feared losses exactly parallel the believed benefits. First, if standards call for the wrong content, for example, basic skills rather than higher order thinking and problem solving, then standards can channel efforts in inappropriate directions. As a special case of this risk, standards are sometimes accused of not allowing for individual

differences among students in their interests, needs, and aptitudes. Thus, external standards might force a poor curriculum on everyone or force all students to pursue a curriculum that serves some better than others. Such misdirected standards are not necessarily a function of evil intent, though there is some evidence of evil intent in the history of American schools (Anyon, 1981; Bowles & Gintis, 1976).

Misdirected standards can occur because, as noted previously, agreement upon what constitutes most worthwhile content does not exist. What seems an appropriate standard to some may seem an inappropriate standard to others. There is also a technical explanation for why misdirected standards might occur. Some content is simply harder to specify and test than is other content (e.g., higher-order thinking and problem solving is much more difficult to specify and teach than are basic skills). This may lead to an overemphasis in standards on what is easy to specify and test and an underemphasis on that which is difficult.

A second risk sometimes attributed to external standard setting concerns motivation. Through rewards and sanctions, externally set standards gain power. When teachers and students are forced to teach and learn content that they are not convinced is appropriate, motivation for teaching and learning will necessarily be extrinsic. Cognitive evaluation theory

> suggests that the presence of a salient external reward or constraint can induce a change in the perceived locus of causality from internal to external, resulting in decreased intrinsic motivation, whereas the absence of a salient reward or constraint and the presence of choice can induce a change in the perceived locus of causality from external to internal resulting in increased intrinsic motivation. (Ryan, 1982, p. 450)

This shift from intrinsic to extrinsic motivation can weaken performance through students and teachers expending "the least effort and most perfunctory ways of insuring reward attainment, even if that means that task engagement

will itself be less inherently interesting to the subject" (Lepper, 1983, p. 297).

Since for each hypothesized benefit of external standard setting there is also a hypothesized loss, the question becomes which is the surest and shortest road to better student outcomes: central control of schools, teachers, and students through top-down external standard setting or local control with teachers exercising their own professional judgment? The answer may depend upon the kinds of teachers and students one has in mind. For example, standards might improve the content and strengthen the motivation of teachers and students who are not doing well. Minimum standards might serve these ends.

But what of the teachers and students who are doing well? Those same minimum standards that work for some may stifle others, inappropriately shifting motivation from primarily intrinsic to primarily extrinsic. Standards that challenge the most knowledgeable teachers and dedicated students to reach for higher degrees of excellence can be unrealistic and demoralizing for teachers who know less and students who fail to see how school learning is relevant to their future life chances. On the other hand, leaving teachers and students to their own predilections might result in pockets of excellence, but leave too many instances of bad teaching and insufficient student learning. Whether or not the benefits of external standards outweigh the risks is, of course, an empirical question. Unfortunately, it is a question for which good answers have not yet been gathered. Tentative predictions about the effects of external standard setting can be formulated, however, based on related empirical work.

Is There a Problem With Content?

If most teaching and learning already focused on worthwhile content, then one of the two primary reasons for having external standards would be

eliminated (though some might still argue in favor of external standards as a way of increasing effort). What is known about the content of classroom instruction is not encouraging on this point. Until recently (approximately the last 10 years), surprisingly little empirical work had been done to describe the content of instruction, the intended outcomes teachers have in mind and attempt to communicate to students through their instruction. A great deal of information was available on profiles of student achievement, but when student achievement was lacking, little information was available to distinguish between the explanations of in appropriate focus and poor pedagogy. The inability of separating these equally plausible alternative explanations for poor student achievement has led to a great deal of finger pointing and generally weakened the hands of those who wish to remedy the situation.

Recent efforts to describe the content of instruction have revealed some rather startling results (Porter, in press). In a study of 36 fourth- and fifth-grade classrooms in six Michigan school districts, not one teacher spent one minute teaching applications involving percents, yet skills with percentages was an important fifth-grade topic. Fourth- and fifth-grade elementary school mathematics is dominated by instruction on computational skills. On average, teachers spend 75% of their instructional time on drill and practice of addition, subtraction, multiplication, and division. The elementary school mathematics curriculum was also found to be troublesomely thin; on average, 70% of the topics covered receive less than 30 minutes of instruction across a full school year. The topics that did receive greater emphasis were heavily skill oriented. Only 10% of the topics involving problem solving and application received 30 minutes or more of instruction across a full school year.

In addition to being skill-dominated and thin, elementary school mathematics is also slow moving. Grade level typically accounted for less than 10% of between-classroom variance in amount of emphasis upon a topic. When looking at the profile of topics covered, it was difficult to distinguish fourth-grade classrooms from fifth-grade classrooms. There was also surprising variance in the amount of time that teachers allocated to mathematics instruction. Using 50-minute lessons as the metric, the teacher who emphasized mathematics the most of the 36 classrooms studied taught the equivalent of 23 weeks worth of mathematics instruction more than the teacher who emphasized mathematics the least.

For the classrooms on which the above results were based, few external standards were in effect and what few there were appeared to be counterproductive (Porter et al., 1988). Lists of objectives and minimum competency tests pushed instruction away from applications and conceptual understanding and toward a heavy focus on skills. Mandated textbooks encouraged covering large numbers of topics each with little emphasis. Standards specifying the amount of time to spend on mathematics were often stated as guidelines, with no power and very little attempt to build authority.

Could this picture of elementary school mathematics be improved through external standard setting? For those who would like to see a more balanced curriculum across conceptual understanding, computational skills, and problem solving, something needs to be done. But many of the people who wish for a balanced curriculum also believe that standard setting will not work; that higher order thinking and problem solving are antithetical to central control and standard setting (e.g., Elmore & McLaughlin, 1988; Wise, 1988).

This pessimistic view of the promise of standards for increasing emphasis upon higher order thinking and problem solving may or may not be correct. The

forces that push against setting external standards for higher order thinking and problem solving are essentially the same forces at work in classrooms. Facts and skills are easier to specify, easier to test, easier to teach, and easier to learn. Certainly a first step would be to critique standard-setting activities to see if they push in undesired directions, as appears to be the case in elementary school mathematics, and where appropriate, to revise standards so that they are at least neutral on such issues as the amount of emphasis teachers and students should place on conceptual understanding and problem solving.

The Danger of Demanding Too Much

One of the most troubling characteristics of the elementary school mathematics curriculum as described in the preceding section concerns the amount of content which is delivered by teachers and studied by students with no intention of student mastery. Teachers refer to this as "teaching for exposure"; Harriet Bernstein (1985) refers to it as "mentioning" when describing the parallel phenomenon in textbooks. Over time, more and more topics have been added to the curriculum. Since the amount of time available for teaching and learning is generally fixed, the net result has been more and more teaching for exposure and less and less teaching for in-depth understanding that empowers students with accessible and usable knowledge.

One explanation for this thinning out of the curriculum is that content-relevant policies, including externally set standards, lack consistency and focus. These inconsistencies add to existing ambiguities in what content is most worthwhile and exacerbate the problem of a thin curriculum. Another explanation, also with implications for standard-setting practices, is that teachers

are more easily persuaded to add new content to their instruction than they are persuaded to discontinue content they have been teaching. In a policy-capturing study investigating the influence of six separate sources of advice to teachers what to teach (e.g., tests, textbooks, objectives, other teachers, principals, and parents), elementary school teachers reported that they would be relatively easily influenced to add five mathematics topics to their instruction. Yet, as the pressures mounted to discontinue teaching five topics that had been a part of their curriculum, teachers were only moved to a point of ambivalence (Floden, Porter, Schmidt, Freeman, & Schwille, 1981). A study in which elementary school teachers were interviewed to determine what it was that their students would learn if their mathematics instruction was 100% effective resulted in a similar finding. At the end of the interview, teachers readily responded to the challenge of what additional topics they might add to their instruction but were generally unable to respond when asked what topics they might drop if less time were available (Schmidt, Porter, Floden, Freeman, & Schwille, 1987).

If teachers are more easily persuaded to add new content to their instruction than they are inclined to delete old content to make way for the new, then it may not be sufficient to have external standards that are focused on worthwhile content in manageable amounts. In addition to external standards, teachers receive advice about what to teach from a wide variety of sources including professional organizations, students, parents, and other teachers. Perhaps, then, efforts to set external standards for student achievement should also provide assistance to teachers and students as to topics that are not important. Such external standards would specify what content should not be taught as well as specify what content should be emphasized.

External Standards and Student Differences

The goal is to maximize the probability of good teaching of worthwhile content to all students. But students come to school with vastly different interests, aptitudes, and plans for the future. This complicates the task of deciding what constitutes most worthwhile content, since it raises the possibility that there is more than one right answer. The question is whether or not externally set standards at the district or state level can serve the best interests of all students or whether alternatively externally set standards necessarily favor some students over others. The answer is not all that clear.

Regardless of the effects of external standards, current distributions of opportunity to learn worthwhile content are highly questionable. In studies of elementary school mathematics, poor children and minority students, even within schools and within classrooms, received less instruction on concepts and applications and more instruction on computational skills than did more affluent and white students (Porter et al., 1988). Not only are conceptual understanding and problem solving more difficult to learn than computations skills, they are also more useful in life and in later studies. They require more time, not less time, and poor children and minority students are the most in need.

Distribution of content across classrooms is even more troublesome. Large differences exist among classrooms and schools in the amount of time allocated to mathematics and in the types of content covered within that time. These differences are uncorrelated with socioeconomic status of the student body or any other identified student characteristic. Depending upon the school and teacher a student happens to attend, the nature of the mathematics studied could differ from as little as 30 minutes of instruction on average per day with almost exclusive emphasis on computational skills to twice that amount of time with

approximately half of the time allocated to developing conceptual understanding and acquiring experience with important applications.

Since standards are more prescriptive in setting minimums than as guideposts for excellence, it may be that externally set standards can have a positive influence on guaranteeing minimum amounts of "worthwhile content" to all children regardless of the school they attend, the teacher to which they are assigned, their color, or their parents' income. This would require a minimum core curriculum of worthwhile content, admittedly a dangerous concept. If the minimum core were to become all that a student knows, then, regardless of who that student is, some assurance would be needed that the student is at least as well off as if another core had been chosen. Such an evaluation would not be easy. But the absence of a core curricula is just as dangerous. In elementary school mathematics no student should be limited to only computational skills, yet this happens all too often. A second challenge to setting a minimum core through external standards is to not penalize students who come to school already knowing that core or who, for whatever reasons, can move quickly through the core with mastery.

External Standards and Teacher Differences

Just as individual differences among students represent a serious challenge to the utility of externally set standards, so do individual differences among teachers. The 2.4 million K-12 teachers in the United States represent great diversity. They all have successfully completed a college education (or at least nearly all), but that is where their similarities end. They differ in the extent to which they know the subject matter they are asked to teach. They differ in their knowledge of good pedagogical practices and classroom management strategies. They differ in their beliefs about what students can and

should learn. They differ in their willingness to invest energy in the task of teaching.

Until recently, virtually all teacher certification procedures involved satisfactory completion of a teacher preparation program at any one of a very large number of public and private institutions of higher education. Rarely was there any direct assessment of a prospective teacher's knowledge, skills, and dispositions related to teaching. In the past five years, states have taken a number of initiatives to strengthen their teacher certification procedures, assessing individuals at the point of entry in the teacher education programs, at the point of exit, and sometimes after taking a position as a teacher. Whether or not these new assessment initiatives will decrease the heterogeneity among teachers in helpful ways remains to be seen. Even if they are successful, a great deal of time will need to pass before the current set of teachers are replaced with new ones having met more stringent certification requirements.

A question, then, is how can externally set standards for student achievement be formulated and maintained in ways that are productive for all students despite the great amount of diversity among teachers? What happens when standards are set for content to be taught and mastered by students that is not well understood by their teachers? Will those teachers attempt the required content despite their lack of knowledge or will they avoid that content? Neither alternative seems to serve students well. Some may believe that teacher subject matter knowledge is not a problem; what little evidence exists about teachers' subject matter knowledge challenges this position.

For example, the Michigan Council of Teachers of Mathematics (1982) surveyed prospective teachers in Michigan universities (at the end of their single

required mathematics course) on their knowledge of mathematics content typically included in the kindergarten through eighth-grade curriculum. Much of the test was difficult for the prospective teachers. Only 17% of the respondents could correctly compute 24 divided by .3, suggesting that for these prospective teachers, the concept of place value remained a problem. Unfortunately, place value is one of the few concepts that is universally taught in elementary school (Freeman et al., 1983). As interest in emphasizing higher order thinking and problem solving increases, challenges to teacher subject matter knowledge are likely to intensify.

Locally Negotiated Standards

Whether or not standards are set externally, teachers set standards for student learning against which they plan their instruction, monitor student progress, make pacing decisions, and evaluate their own instructional practices. Where do these local standards come from and how do they serve the goal of good teaching of worthwhile content for all students?

The communities that schools serve and the parents and children from those communities are a powerful force in shaping the standards that operate in classrooms (Cusick & Wheeler, 1988). Generally, affluent communities demand more content and more conceptual and application-oriented content than do less affluent communities. Also, affluent communities are seen by schools as a legitimate authority for setting student achievement standards. This is less the case in schools serving poor communities (e.g., Porter et al., 1988). Students from poor families see schools and academic achievement as less relevant to their future; they attempt to negotiate with their teachers for lower standards (e.g., Sedlak, Wheeler, Pullin, & Cusick, 1986). For highly affluent communities then, school standards are continually challenged to become more demanding

while for poor communities, school standards are continually challenged to become less demanding.

External standard setting appears to hold the greatest potential for benefiting children from poor families, although this conclusion is based on two important assumptions. The first and most important assumption is that externally set standards call for truly worthwhile content, content which if learned would improve the academic and economic futures of children from poor families. That this will be so is in no way guaranteed (e.g., Ogbu, 1983). Second, externally set standards must lead to good teaching that inspires children from poor families. This would require that externally set standards be accompanied by the resources students and teachers need to succeed against the standards. No one profits from standards which require worthwhile content but drive poor children out of school. Of the difficulties identified thus far, this is the most important and perhaps the most difficult for external standards to resolve.

Seeking Middle Ground as a Third Alternative

Classroom teaching and learning is not what many would like it to be. There are good reasons for considering external standards as a way toward increasing the probability of good teaching of worthwhile content to all students. The problem is that for every perceived benefit of external standard setting there is a possible cost as well. Standards may assure student achievement but that which is achieved may not be most important (e.g., facts and skills, not higher order thinking and problem solving). Standards may ensure that instruction covers important content but in so doing sacrifice depth of coverage for breadth of coverage. Standards may assure worthwhile content for poorly motivated and low aptitude students, but stifle the learning experiences

for more gifted students. Standards may motivate students to work harder by holding them accountable, but in holding students accountable, teachers may come to accept less responsibility themselves for what students learn.

These trade-offs to standard setting arise in part because excellence is not the opposite of minimum competence. Excellence is the standard that we wish to set for schools, teachers, and student learning, but minimum competence appears to be what we know how to specify and demand. Minimum competence applies to all, but excellence is individualistic; something that must be encouraged and nurtured through intensely personal negotiations between teacher and student. As stated in A Nation at Risk (the report that began the 1980s reforms for excellence), "At the level of the individual learner, it [excellence] means performing on the boundary of individual ability in ways that test and push back personal limits, in school and in the work place" (National Commission on Excellence in Education, p. 12). States and school districts have considerable experience legislating minimum competencies, but they have not yet devised ways for legislating excellence. Given the individualistic nature of excellence, legislating excellence may not be possible.

The challenge to external standard-setting activities is to set standards which guarantee good teaching of worthwhile content to all students. To do this will require standard-setting activities which somehow preserve (or strengthen) the responsibility that teachers and students accept together for student learning. One way to do this might be to shift external standard setting away from reliance on rewards and sanctions (power) and toward reliance on authority. External standard-setting activities would become matters of persuasion, not issues of compliance.

Simply telling teachers what to do is not likely to have the desired results. Neither is leaving teachers alone to pursue their own predilections. A

productive middle ground might be to involve teachers seriously in the business of setting standards for student achievement. The result would still be external standards set at state and/or district levels (or perhaps even nationally, as may be done by the National Board of Professional Teacher Standards). Through the process of teacher representative participation in these external standard-setting activities, the standards would take on authority. Teachers would become involved in the task of telling teachers what to do. Rosenholtz (1987) refers to this approach as delegated authority and Benne (1986) calls it anthropological authority.

Teacher participation in standard setting alone will not be sufficient by itself. The education system would need to provide the support necessary for teachers and students to have a reasonable chance of reaching the standards. Without making clear that necessary support will be forthcoming, teacher participation might result in inappropriately low standards, standards which are not sufficiently challenging and therefore not in the students' best interests.

The approach of involving teachers in external standard setting and accompanying standard setting activities with assurances of needed support for implementation of the new standards would have three important characteristics. First, the change would come through persuasion not through requirements. In so doing, the approach might preserve the responsibility that teachers accept for student learning. Second, teacher acceptance of responsibility for student learning might be enhanced through the availability of resources needed to deliver good teaching of worthwhile content to all students. The support would need to alleviate tensions caused by substantial differences among teachers and among students. Third, in focusing upon setting standards for student achievement, the what of teaching, discretion is left to teachers in organizing and delivering instruction, the how of teaching.

By involving teachers in setting standards, by restricting standard setting to student achievement and leaving pedagogical practice a matter for individual professional discretion, and by recognizing that new standards require new resources (e.g., teacher knowledge, instructional materials, new organizational structure), it may be possible to reap the perceived benefits of external standard setting and the perceived benefits of teacher empowerment. The approach sketched here for reaching a middle ground between these two otherwise conflicting points of view has a parallel in the business world. Waterman (1987) describes the concept of directed autonomy as when "people in every nook and cranny of the company are empowered--encouraged, in fact--to do things their way. Suggestions are actively sought. But this all takes place within a context of direction" (p. 75). The idea is to maintain control of output through reaching shared understanding of what that output should be and then creating a supportive climate in which individuals committed to the outputs use their expertise and ingenuity to be productive. Analogies between business and schools break down when pushed to specifics, but at a more general level they can be instructive.

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